



# CHAPTER 1

## Product Overview

This chapter describes the Cisco ME 6500 series Ethernet switches and contains these sections:

- [Cisco ME 6524 Ethernet Switch \(ME-C6524GS-8S\)](#), page 1-1
- [Cisco ME 6524 Ethernet Switch \(ME-C6524GT-8S\)](#), page 1-8

## Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S)

The ME 6524 Ethernet switch (ME-C6524GS-8S) is a member of the Cisco ME 6500 series Ethernet switches. The Cisco ME 6524 Ethernet switch (ME-C6524GS-8S) is a 1.5 RU horizontal chassis with 24 SFP downlink ports and 8 SFP uplink ports. [Table 1-1](#) lists the features of the Cisco ME 6524 Ethernet switch (ME-C6524GS-8S) chassis. [Table 1-2](#) lists the specifications of the Cisco ME 6524 Ethernet switch (ME-C6524GS-8S) chassis. [Table 1-3](#) lists the front panel LEDs and their meanings. [Figure 1-1](#) shows the front view of the chassis with the major features identified; [Figure 1-2](#) shows the rear view of the chassis with the major features identified.

**Table 1-1** *Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Features*

| Feature        | Description  |
|----------------|--|
| Chassis        | 1.5 RU height, fixed configuration chassis   |
| Modules        | Fixed configuration chassis; modules cannot be installed in the chassis.   |
| Fan Tray       | <ul style="list-style-type: none"><li>• Supports one hot swappable fan tray (FAN-C6524). The fan tray contains seven fans for chassis cooling. The individual fans are not replaceable.</li><li>• Fan tray FAN LED<ul style="list-style-type: none"><li>– Green—Fan tray is operating normally.</li><li>– Red—One or more individual fans have failed.</li></ul></li></ul> |
| Power Supplies | <ul style="list-style-type: none"><li>• Supports one or two power supplies. The following power supplies are supported:<ul style="list-style-type: none"><li>– PWR-400W-DC (400 W DC-input power supply)</li></ul></li><li>• Power supply LEDs—Refer to <a href="#">Table A-1 on page A-1</a> for LED colors and their meanings.</li></ul>                                 |

**Table 1-1** *Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Features (continued)*

| Feature                          | Description  |
|----------------------------------|--|
| Pluggable transceivers supported | <ul style="list-style-type: none"> <li>SFP transceivers. The 8 uplink ports support the following SFP transceiver types: <ul style="list-style-type: none"> <li>GLC-T—1000BASE-T</li> <li>GLC-SX-MM—1000BASE-SX</li> <li>GLC-LH-SM—1000BASE-LX/LH</li> <li>GLC-ZX-SM—1000BASE-ZX</li> <li>GLC-BX-D—1000BASE-BX10-D</li> <li>GLC-BX-U—1000BASE-BX10-U</li> <li>GLC-FE-100BX-D—100BASE-BX10-D</li> <li>GLC-FE-100BX-U—100BASE-BX10-U</li> <li>CWDM-SFP-xxxx—CWDM SFP transceivers</li> </ul> </li> </ul> <p>The 24 downlink ports support the following SFP transceiver types:</p> <ul style="list-style-type: none"> <li>GLC-T—1000BASE-T</li> <li>GLC-SX-MM—1000BASE-SX</li> <li>GLC-LH-SM—1000BASE-LX/LH</li> <li>GLC-ZX-SM—1000BASE-ZX</li> <li>GLC-BX-D—1000BASE-BX10-D</li> <li>GLC-BX-U—1000BASE-BX10-U</li> <li>GLC-FE-100BX-D—100BASE-BX10-D</li> <li>GLC-FE-100BX-U—100BASE-BX10-U</li> </ul> <p><b>Note</b> Refer to Appendix B for SFP transceiver cabling distances and additional information.</p> |
| Front panel LEDs                 | <p>The chassis front panel has the following LEDs:</p> <ul style="list-style-type: none"> <li>PS1</li> <li>PS2</li> <li>FAN</li> <li>STATUS</li> <li>Downlink ports (24 LEDs)</li> <li>CompactFlash Activity</li> <li>Uplink ports (8 LEDs)</li> </ul> <p><b>Note</b> Refer to <a href="#">Table 1-3</a> for LED colors and their meanings.</p>  |

**Table 1-1** *Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Features (continued)*

| Feature        | Description   |
|----------------|---|
| RESET switch   | A recessed switch allows the user to reset the system.  |
| Console port   | A single console port allows the user access to the command-line interface. The console port has an RJ-45 connector.  |
| USB ports      | The switch has two USB ports: <ul style="list-style-type: none"><li>• Port 1 is a device port with a Type B USB connector. A standard USB 1.1 host, such as a PC, can plug into this port.</li><li>• Port 2 is a host port with a Type A USB connector. A standard USB 1.1 device, such as Flash memory, can plug into this port.</li></ul> |
| PCMCIA slot    | Type 2 CompactFlash devices can be installed in this slot.  |
| Downlink ports | The chassis front panel has 24 downlink ports. An SFP transceiver must be installed for the port to operate. Cable type and recommended cabling distance are determined by the type of SFP transceiver installed in the downlink port.  |
| Uplink ports   | The chassis front panel has 8 uplink ports. An SFP transceiver must be installed for the port to operate. Cable type and recommended cabling distance are determined by the type of SFP transceiver installed in the uplink port.   |

**Table 1-2 Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Specifications**

| Item  | Specification  |
|---|--|
| <b>Environmental</b>  |  |
| Temperature, ambient operating                                  | <p>Certified for operation: 32° to 104°F (0° to 40°C)</p> <p>Designed and tested for operation: 32° to 130°F (0° to 55°C)</p> <p><b>Note</b> The Cisco ME 6524 Ethernet switch is equipped with internal air temperature sensors that generate a minor alarm at 104°F (40°C) and a major alarm at 131°F (55°C).</p>  |
| Temperature, ambient nonoperating and storage                   | –4° to 149°F (–20° to 65°C)  |
| Thermal transition  | <p>0.5°C per minute (hot to cold)</p> <p>0.33°C per minute (cold to hot)</p>   |
| Humidity (RH), ambient (noncondensing) operating                | 5% to 90%  |
| Humidity (RH), ambient (noncondensing) nonoperating and storage | 5% to 95%  |
| Altitude, operating   | <p>Certified for operation: 0 to 6500 feet (0 to 2000 m)</p> <p>Designed and tested for operation: –200 to 10,000 feet (–60 to 3000 m)</p>   |
| <b>Shock and vibration</b>                                      | <p>This switch complies with Network Equipment Building Systems (NEBS) (Zone 4 per GR-63-Core) in the following areas:</p> <ul style="list-style-type: none"> <li>• Earthquake environment and criteria</li> <li>• Office vibration and criteria</li> <li>• Transportation vibration and criteria</li> </ul> <p><b>Shock</b></p> <ul style="list-style-type: none"> <li>• Operational—5 G 30 ms, half-sine (IEC 68-2-27)</li> <li>• Nonoperational—20 G, 7.5 ms, trapezoidal</li> </ul> <p><b>Vibration</b></p> <p>Operational—3 Hz to 500 Hz,<br/>Power Spectral Density (PSD)–0.0005 G<sup>2</sup>/Hz at 10 Hz and 200 Hz.<br/>5 dB/octave roll off at each end. 0.5 hours per axis (1.12 Grms).</p> |
| <b>Acoustic Noise</b>   | 64 to 76 dB. International Organization for Standardization (ISO) 7779: Bystander position operating to an ambient temperature of 86°F (30°C).   |

**Table 1-2 Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Specifications (continued)**

| Item                            | Specification  |
|---------------------------------|--|
| <b>Physical Characteristics</b> |  |
| Dimensions (H x W x D)          | <ul style="list-style-type: none"> <li>2.58 x 17.29 x 19.00 in. (6.54 x 43.92 x 48.26 cm).</li> <li>Chassis requires 1.5 RU<sup>1</sup>.</li> <li>Chassis can be mounted in 19-inch equipment racks that meet ANSI/EIA 310-D and ETS 300-119 standards.</li> </ul>   |
| Weight                          | 29.13 lb (13.21 kg).   |
| <b>Airflow</b>                  | <ul style="list-style-type: none"> <li>FAN-C6524—110 CFM</li> </ul> <p><b>Note</b> To maintain proper air circulation through the switch chassis, we recommend that you maintain a minimum 6-inch (15 cm) separation between a wall and the chassis air intake or a wall and the chassis air exhaust. You should also allow a minimum separation of 12 inches (30.5 cm) between the hot air exhaust on one chassis and the air intake on another chassis. Failure to maintain adequate air space can cause the chassis to overheat and the system to fail.</p> |

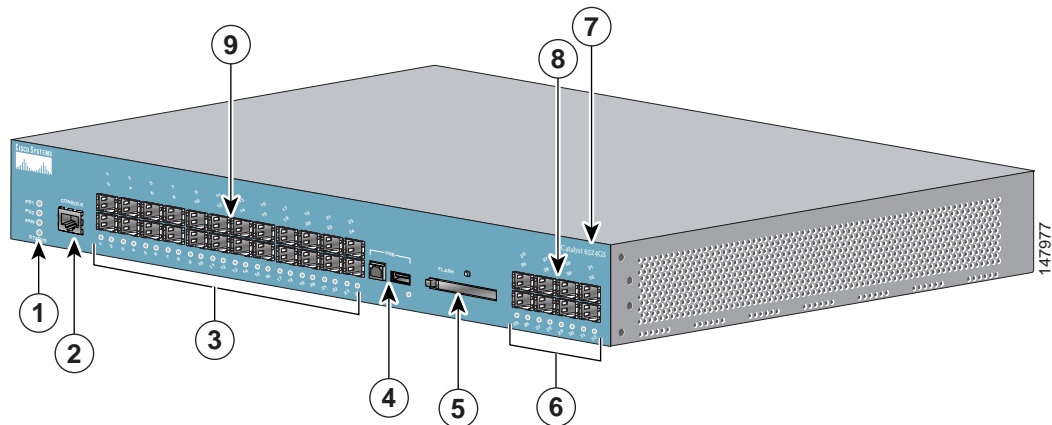
1. RU = rack units

**Table 1-3 Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Front Panel LEDs**

| LED                     | Color/Meaning   |
|-------------------------|---|
| PS1<br>(Power supply 1) | Green—Power supply is on and the input and output voltages are OK.<br>Red—The power supply has a fault.<br>Off—The power supply is off or is not installed. |
| PS2<br>(Power supply 2) | Green—Power supply is on and the input and output voltages are OK.<br>Red—The power supply has a fault.<br>Off—The power supply is off or is not installed. |
| FAN                     | Green—Fan tray is operating normally.<br>Red—One or more individual fans in the fan tray have failed.   |
| STATUS                  | Green—The system is operating normally.<br>Red—A fault has been detected in the system.<br>Amber—System is booting up.<br>Off—The system is not powered up. |

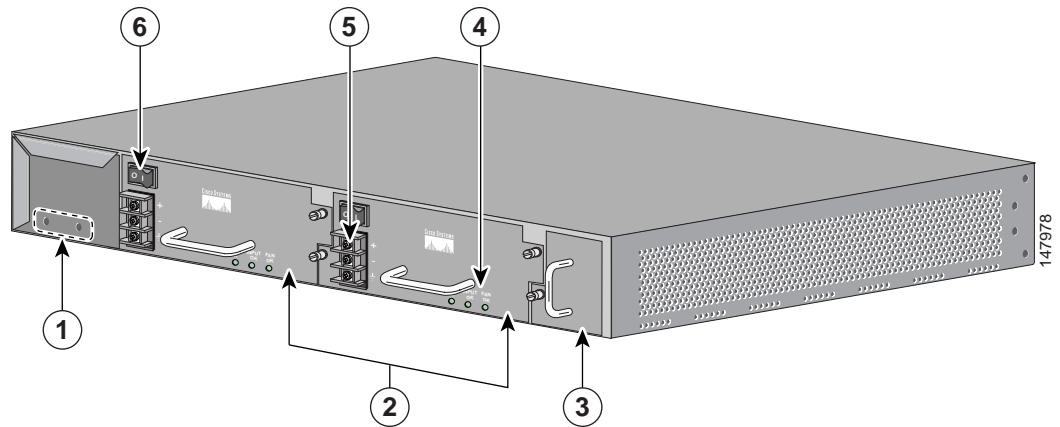
**Table 1-3** *Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S) Front Panel LEDs (continued)*

| LED                        | Color/Meaning   |
|----------------------------|---|
| Uplink port<br>(8 LEDs)    | Green—The link is established and operational.<br>Amber—The port is disabled.<br>Blinking amber—The system has detected a fault with the link.<br>Off—No link is established or the SFP transceiver is not installed. |
| Downlink port<br>(24 LEDs) | Green—The link is established and operational.<br>Amber—The port is disabled.<br>Blinking amber—The system has detected a fault with the link.<br>Off—No link is established or the SFP transceiver is not installed. |

**Figure 1-1** *Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S)—Front View*

|   |  |   |  |
|---|--|---|--|
| 1 | STATUS LEDs                                | 2 | Console port (RJ-45 connector)           |
| 3 | Downlink ports LEDs                        | 4 | USB ports                                |
| 5 | PCMCIA slot                                | 6 | Uplink ports LEDs                        |
| 7 | ESD ground connector                       | 8 | Uplink ports (SFP transceivers required) |
| 9 | Downlink ports (SFP transceivers required) |   |  |

**Figure 1-2** Cisco ME 6524 Ethernet Switch (ME-C6524GS-8S)—Rear View



|   |  |   |                          |
|---|--|---|--------------------------|
| 1 | System ground pad/NEBS ground location | 2 | Power supplies           |
| 3 | Fan tray                               | 4 | Power supply status LEDs |
| 5 | Power supply terminal block            | 6 | Power on/off switch      |

# Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S)

The Cisco ME 6524 Ethernet switch (ME-C6524GT-8S) is a member of the Cisco ME 6500 series Ethernet switches. The Cisco ME 6524 Ethernet switch (ME-C6524GT-8S) is a 1.5 RU horizontal chassis with 24 10/100/1000 downlink ports and 8 1000BASE SFP uplink ports. [Table 1-4](#) lists the features of the Cisco ME 6524 Ethernet switch (ME-C6524GT-8S) chassis. [Table 1-5](#) lists the specifications of the Cisco ME 6524 Ethernet switch (ME-C6524GT-8S) chassis. [Table 1-6](#) lists the front panel LEDs and their meanings. [Figure 1-3](#) shows the front view of the chassis with the major features identified; [Figure 1-4](#) shows the rear view of the chassis with the major features identified.

**Table 1-4** Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Features

| Feature                          | Description  |
|----------------------------------|--|
| Chassis                          | 1.5 RU height, fixed configuration chassis   |
| Modules                          | Fixed configuration chassis; modules cannot be installed in the chassis.   |
| Fan Tray                         | <ul style="list-style-type: none"> <li>Supports one hot swappable fan tray (FAN-C6524). The fan tray contains seven fans for chassis cooling. The individual fans are not replaceable.</li> <li>Fan tray FAN LED               <ul style="list-style-type: none"> <li>Green—Fan tray is operating normally.</li> <li>Red—One or more individual fans have failed.</li> </ul> </li> </ul>   |
| Power Supplies                   | <ul style="list-style-type: none"> <li>Supports one or two power supplies. The following power supplies are supported:               <ul style="list-style-type: none"> <li>PWR-400W-DC (400 W DC-input power supply)</li> </ul> </li> <li>Power supply LEDs—Refer to <a href="#">Table A-1 on page A-1</a> for LED colors and their meanings.</li> </ul>  |
| Pluggable transceivers supported | <ul style="list-style-type: none"> <li>SFP transceivers. The 8 uplink ports support the following SFP transceivers:               <ul style="list-style-type: none"> <li>GLC-T—1000BASE-T</li> <li>GLC-SX-MM—1000BASE-SX</li> <li>GLC-LH-SM—1000BASE-LX/LH</li> <li>GLC-ZX-SM—1000BASE-ZX</li> <li>GLC-BX-D—1000BASE-BX10-D</li> <li>GLC-BX-U—1000BASE-BX10-U</li> <li>GLC-FE-100BX-D—100BASE-BX10-D</li> <li>GLC-FE-100BX-U—100BASE-BX10-U</li> <li>CWDM-SFP-xxxx—CWDM SFP transceivers</li> </ul> </li> </ul> <p><b>Note</b> Refer to Appendix B for SFP transceiver cabling distances and additional information.</p> |



**Table 1-4** *Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Features (continued)*

| Feature          | Description   |
|------------------|---|
| Front panel LEDs | <p>The chassis front panel has the following LEDs:</p> <ul style="list-style-type: none"> <li>• PS1</li> <li>• PS2</li> <li>• FAN</li> <li>• STATUS</li> <li>• Downlink ports (24 LEDs)</li> <li>• CompactFlash Activity</li> <li>• Uplink ports (8 LEDs)</li> </ul> <p><b>Note</b> Refer to <a href="#">Table 1-3</a> for LED colors and their meanings.</p> |
| RESET switch     | A recessed switch allows the user to reset the system.  |
| Console port     | A single console port allows the user access to the command-line interface. The console port has an RJ-45 connector.  |
| USB ports        | <p>The switch has two USB ports:</p> <ul style="list-style-type: none"> <li>• Port 1 is a device port with a Type B USB connector. A standard USB 1.1 host, such as a PC, can plug into this port.</li> <li>• Port 2 is a host port with a Type A USB connector. A standard USB 1.1 device, such as Flash memory, can plug into this port.</li> </ul>         |
| PCMCIA slot      | Type 2 CompactFlash devices can be installed in this slot.  |
| Downlink ports   | The chassis front panel has 24 downlink ports. These are 10/100/1000 ports using RJ-45 female connectors.   |
| Uplink ports     | The chassis front panel has 8 uplink ports. An SFP transceiver must be installed for the port to operate. Cable type and recommended cabling distance are determined by the type of SFP transceiver installed in the uplink port.   |

**Table 1-5 Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Specifications**

| Item  | Specification  |
|---|--|
| <b>Environmental</b>  |  |
| Temperature, ambient operating                                  | <p>Certified for operation: 32° to 104°F (0° to 40°C)</p> <p>Designed and tested for operation: 32° to 130°F (0° to 55°C)</p> <p><b>Note</b> The Cisco ME 6524 Ethernet switch is equipped with internal air temperature sensors that generate a minor alarm at 104°F (40°C) and a major alarm at 131°F (55°C).</p>  |
| Temperature, ambient nonoperating and storage                   | –4° to 149°F (–20° to 65°C)  |
| Thermal transition  | <p>0.5°C per minute (hot to cold)</p> <p>0.33°C per minute (cold to hot)</p>   |
| Humidity (RH), ambient (noncondensing) operating                | 5% to 90%  |
| Humidity (RH), ambient (noncondensing) nonoperating and storage | 5% to 95%  |
| Altitude, operating   | <p>Certified for operation: 0 to 6500 feet (0 to 2000 m)</p> <p>Designed and tested for operation: –200 to 10,000 feet (–60 to 3000 m)</p>   |
| <b>Shock and vibration</b>                                      | <p>This switch complies with Network Equipment Building Systems (NEBS) (Zone 4 per GR-63-Core) in the following areas:</p> <ul style="list-style-type: none"> <li>• Earthquake environment and criteria</li> <li>• Office vibration and criteria</li> <li>• Transportation vibration and criteria</li> </ul> <p><b>Shock</b></p> <ul style="list-style-type: none"> <li>• Operational—5 G 30 ms, half-sine (IEC 68-2-27)</li> <li>• Nonoperational—20 G, 7.5 ms, trapezoidal</li> </ul> <p><b>Vibration</b></p> <p>Operational—3 Hz to 500 Hz,<br/>Power Spectral Density (PSD)–0.0005 G<sup>2</sup>/Hz at 10 Hz and 200 Hz.<br/>5 dB/octave roll off at each end. 0.5 hours per axis (1.12 Grms).</p> |
| <b>Acoustic Noise</b>   | 64 to 76 dB. International Organization for Standardization (ISO) 7779: Bystander position operating to an ambient temperature of 86°F (30°C).   |

**Table 1-5 Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Specifications (continued)**

| Item                            | Specification  |
|---------------------------------|--|
| <b>Physical Characteristics</b> |  |
| Dimensions (H x W x D)          | <ul style="list-style-type: none"> <li>2.58 x 17.29 x 19.00 in. (6.54 x 43.92 x 48.26 cm).</li> <li>Chassis requires 1.5 RU<sup>1</sup>.</li> <li>Chassis can be mounted in 19-inch equipment racks that meet ANSI/EIA 310-D and ETS 300-119 standards.</li> </ul>   |
| Weight                          | 29.13 lb (13.21 kg).   |
| <b>Airflow</b>                  | <ul style="list-style-type: none"> <li>FAN-C6524—110 CFM</li> </ul> <p><b>Note</b> To maintain proper air circulation through the switch chassis, we recommend that you maintain a minimum 6-inch (15 cm) separation between a wall and the chassis air intake or a wall and the chassis air exhaust. You should also allow a minimum separation of 12 inches (30.5 cm) between the hot air exhaust on one chassis and the air intake on another chassis. Failure to maintain adequate air space can cause the chassis to overheat and the system to fail.</p> |

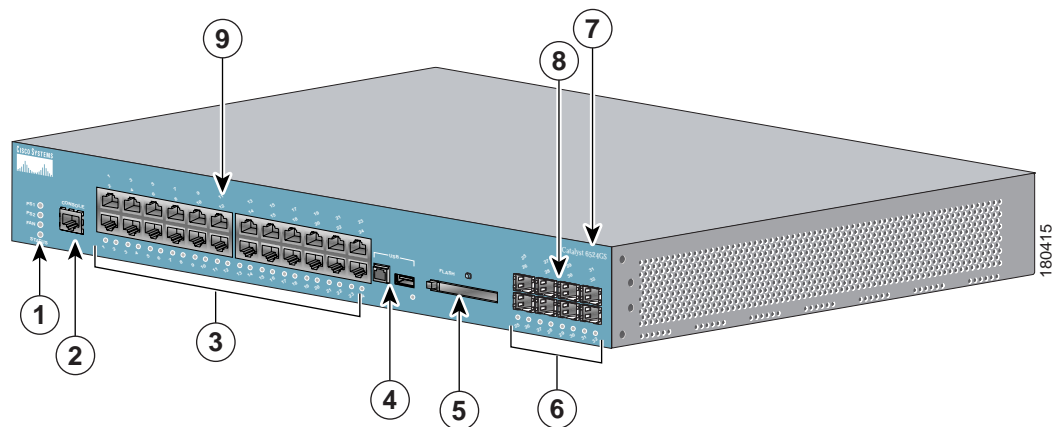
1. RU = rack units

**Table 1-6 Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Front Panel LEDs**

| LED                     | Color/Meaning   |
|-------------------------|---|
| PS1<br>(Power supply 1) | Green—Power supply is on and the input and output voltages are OK.<br>Red—The power supply has a fault.<br>Off—The power supply is off or is not installed.     |
| PS2<br>(Power supply 2) | Green—Power supply is on and the input and output voltages are OK.<br>Red—The power supply has a fault.<br>Off—The power supply is off or is not installed.     |
| FAN                     | Green—Fan tray is operating normally.<br>Red—One or more individual fans in the fan tray have failed.   |
| STATUS                  | Green—The system is operating normally.<br>Red—A fault has been detected in the system.<br>Amber—The system is booting up.<br>Off—The system is not powered up. |

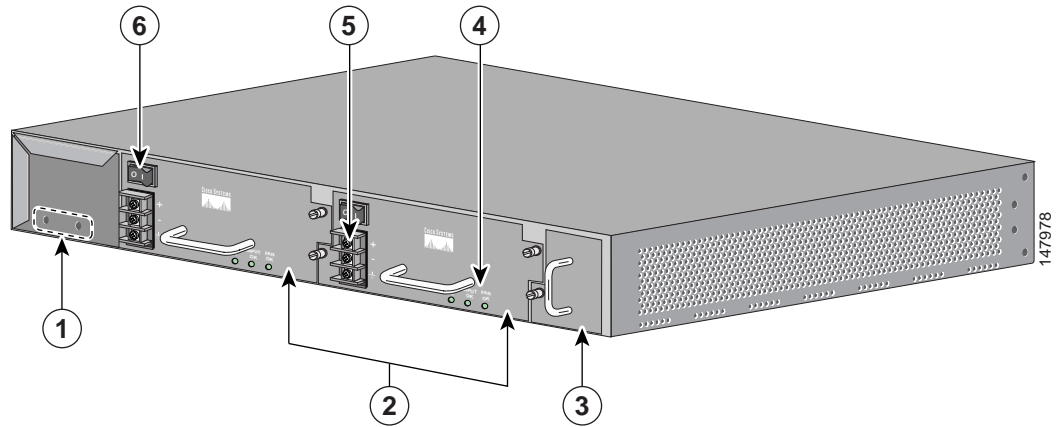
**Table 1-6** *Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S) Front Panel LEDs (continued)*

| LED                        | Color/Meaning   |
|----------------------------|---|
| Uplink port<br>(8 LEDs)    | Green—The link is established and operational.<br>Amber—The port is disabled.<br>Blinking amber—The system has detected a fault with the link.<br>Off—No link is established or the SFP transceiver is not installed. |
| Downlink port<br>(24 LEDs) | Green—The link is established and operational.<br>Amber—The port is disabled.<br>Blinking amber—The system has detected a fault with the link.<br>Off—No link is established.   |

**Figure 1-3** *Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S)—Front View*

|   |                                   |   |  |
|---|-----------------------------------|---|--|
| 1 | STATUS LEDs                       | 2 | Console port (RJ-45 connector)           |
| 3 | Downlink ports LEDs               | 4 | USB ports                                |
| 5 | PCMCIA slot                       | 6 | Uplink ports LEDs                        |
| 7 | ESD ground connector              | 8 | Uplink ports (SFP transceivers required) |
| 9 | Downlink ports (RJ-45 connectors) |   |  |

**Figure 1-4** Cisco ME 6524 Ethernet Switch (ME-C6524GT-8S)—Rear View



|   |  |   |                          |
|---|--|---|--------------------------|
| 1 | System ground pad/NEBS ground location | 2 | Power supplies           |
| 3 | Fan tray                               | 4 | Power supply status LEDs |
| 5 | Power supply terminal block            | 6 | Power on/off switch      |

